Advancement Handbook for Information Systems Technician (IT)

The April 2000 Handbook was reviewed during June 2002. This review resulted in numerous changes to the technical content. Discard previous versions and use this copy only

PREFACE

    The purpose of the Advancement Handbook is to help you focus your preparation for Navy-wide advancement-in-rating examinations. The bibliographies (BIBs) together with this handbook form a comprehensive examination study package. Since this handbook provides skill and knowledge components for each paygrade of the Information Systems Technician rating, it helps you concentrate your study on those areas that may be tested. This feature will help you get the most out of your study time.

    Each page in Parts 1 through 4 of this Advancement Handbook presents general skill areas, specific skill areas, the knowledge factors associated with each skill area, the pertinent references required to perform each skill, and the types of subject areas that may be covered on the examination. The skill statements are cumulative; that is, you are responsible for the skills for the paygrade you are competing for, your present paygrade, and all paygrades below.

    Although this handbook is very comprehensive, it cannot cover all the tasks performed in the rating. As a result, the advancement examinations may contain questions more detailed than described in the *"Exam Expectations"* section of the skill areas.

    Remember that advancement competition is keen, so your keys to advancement include not only comprehensive advancement examination study but also sustained superior performance.

Prepared by

Navy Advancement Center Department
Naval Education and Training Professional
Development and Technology Center

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Part 1

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform conversions and calculations of numbering systems; read and interpret alphanumeric coding schemes**
Knowledge you should have to perform this skill:	• Convert numbering systems (Binary, Hexadecimal, and Octal) • Read and interpret coding schemes • Examine contents of memory address
References you should study to gain the knowledge you need to perform this skill:	• Navy Electricity and Electronics Training Series, Module 22, Ch. 4
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about data representation and conversions, reading and interpreting coding schemes, flowcharts, and memory addresses.

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Setup, install, and configure all types of computers and peripheral equipment**
Knowledge you should have to perform this skill:	• Perform System Administrator functions • Set computer time clocks and date calendars • Setup and install peripheral devices • Install and configure extended or expanded memory • Perform equipment configuration changes • Set parameters for computer and peripheral operation • Install serial/parallel devices • Install mass media storage devices • Install communication devices • Install, configure, and setup boards, chips, cables and other devices • Install, configure, and setup operating systems, office suite applications, communication programs, utility programs and other end-user programs • Make CMOS/BIOS configuration changes • Calculate storage requirements for computer systems and data • Calculate memory requirements for computer systems and data • Prepare computer systems for movement and shipment
References you should study to gain the knowledge you need to perform this skill:	• Upgrading and Repairing PC's, areas covering "Overview," "System Tear Down and Inspection," "Motherboards," "Bus Slots and I/O cards," "Microprocessors," "Memory," "Input Devices," "Video," "Communications and Networking,"

	"Audio," "Drives and Controllers," "Storage Devices," and "Building a System." • PC's for Dummies, areas covering "It Doesn't Work."
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the installation, configuration and setup of various software programs and hardware devices and computers, including resource configuration changes, calculations and settings

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Start up network processing**
Knowledge you should have to perform this skill:	• Boot network control servers • Start up and terminate network processing • Perform logon and logoff procedures on a network • Establish data communications with remote computer terminals
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, Chs. "R," "L"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about booting up; starting and terminating network processing, to include logon/logoff procedures; and establishing data communications

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Setup and install networks**
Knowledge you should have to perform this skill:	• Make physical connections to networks • Install network software • Monitor networks
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Management," "Installation of Software and Hardware," and "Connections."
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about network installations, to include making connections, installing software, and monitoring the networks

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform operator maintenance/ troubleshooting**
Knowledge you should have to perform this skill:	• Inspect, repair, and/or replace all computer system peripheral devices, both internal and external. • Reset, restart computer systems and peripheral devices as required • Perform equipment interlock operational checks • Run equipment/system diagnostic tests • Troubleshoot error conditions • Monitor and interpret indicator lights on all components of a computer system • Inspect computer system components • Interpret indicator lights on all components of a computer • Perform systems built-in tests (BITs) • Perform and interpret equipment or diagnostic tests • Troubleshoot error conditions and failures on computer system components • Inspect computer cables • Inspect electrical circuits • Troubleshoot error conditions and failures on computer system components • Inspect computer system components • Monitor hardware status • Run equipment performance checks/ utilization reports • Coordinate trouble calls • Write trouble reports

References you should study to gain the knowledge you need to perform this skill:	• PC's for Dummies, area covering "Things to Try" • Upgrading and Repairing PC's, areas covering "Maintaining Your System," "Diagnostic Tools," and "Troubleshooting." • IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about inspecting, repairing and replacing computer components; devices and accessories; and running, monitoring and interpreting diagnostic and performance checks on equipment, to include troubleshooting.

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Manage a Media Library**
Knowledge you should have to perform this skill:	• Draft procedures and parameters for initialization of storage media • Initialize or format storage media • Certify storage media • Update media library files • Check storage media into and out of media library • Maintain off-site or remote storage for media library backup files • Perform physical inventory of media library • Clean and physically inspect storage media • Verify internal and external labels and security markings on storage media • Verify presence of data on storage media • Copy and verify data from one medium to another • Place load point/end of tape markers on magnetic tapes • Prepare labels for internal or external media • Package media for shipment • Degauss magnetic media • Destroy storage media
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on running and managing a media library.

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform computer system operator functions**
Knowledge you should have to perform this skill:	• Query system status via console • Perform operational startup of computer systems • Perform operational restart of computer systems • Perform operational recovery of computer systems • Power up and power down all components of a computer system • Perform emergency power down procedures on communications and Automated Information Systems (AIS) equipment • Inspect computer system components • Interpret indicator lights on all components of a computer system • Monitor status of application and system programs • Screen journal logs and console printouts • Document system operating errors • Load or unload storage media into or from media storage devices • Initiate and run batch job processing • Perform system dumps • Monitor computer system transmissions

References you should study to gain the knowledge you need to perform this skill:	• PC's for Dummies, areas covering "Taming the Beast," "Common Computer Stuff" • Upgrading and Repairing PC's, areas covering "Operating Systems Software," "Maintaining Your System" • IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on console operations; power up/down procedures; bootup, restart and recovery procedures; running jobs, documenting and recording procedures; and monitoring system status

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Manipulate data and files on computer systems.**
Knowledge you should have to perform this skill:	• Output data from computer systems • Inspect printed data output • Convert data files • Process data files • Transfer data files • Verify data files • Input data on computer systems
References you should study to gain the knowledge you need to perform this skill:	• Inside UNIX, areas Covering "SHELLS," "Creating and Manipulating Files and Directories," "Controlling Permission to Files," "grep and find," "Extracting Data," "Redirection and Piping," and "Sorting and Comparing Files" • IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on file and data manipulation.

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Maintain environmental conditions**
Knowledge you should have to perform this skill:	• Inspect operation of environment monitoring equipment • Replace paper and pens in environment monitoring equipment • Maintain/monitor temperature and humidity recording devices
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on monitoring and maintaining environmental equipment and conditions.

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General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Install/upgrade software on a computer system.**
Knowledge you should have to perform this skill:	• Load software from CD-ROMs • Load software from diskettes • Load software from a network server • Setup and configure software defaults and parameters • Verify compliance with software licensing • Verify sufficient resources available prior to installation
References you should study to gain the knowledge you need to perform this skill:	• PC's for Dummies, areas covering "Software" • Upgrading and Repairing PC's, areas covering "Operating Systems Software" • IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on software installation, configuration, setup, licensing, and available resources

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General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Work with files/directories**
Knowledge you should have to perform this skill:	• Create system directories • Modify system directories • Delete system directories • Backup system directories • Restore system directories • Create files • Delete files • Modify files • Recover files • Backup files • Restore files • Move/copy files • Append to files • Rename files
References you should study to gain the knowledge you need to perform this skill:	• Inside UNIX, areas covering "SHELLS," "Creating and Manipulating Files and Directories," "Controlling Permission to Files," "grep and find," "Extracting Data," "Redirection and Piping," and "Sorting and Comparing Files" • PC's for Dummies • IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on various UNIX commands and utilities

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General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Execute application programs**
Knowledge you should have to perform this skill:	- Perform system dumps - Record computer run times - Perform computer program testing - Diagnose/correct program errors - Log AIS requests - Execute utility programs - Run batch job processes - Execute AIS virus protection of software
References you should study to gain the knowledge you need to perform this skill:	IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on various application, utility, and system programs; software testing; and documentation and virus protection

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General IT *Skill Area*	**TECHNICAL ADMINISTRATION**
A *skill* you are expected to perform from the General Skill Area above:	**Perform technical administration**
Knowledge you should have to perform this skill:	• Design or modify report formats as required • Monitor run schedules • Write trouble reports
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on how to design or modify reporting formats as required; monitoring run schedules; and writing trouble reports

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General IT *Skill Area*	**ANALYSIS AND PROGRAMMING**
A *skill* you are expected to perform from the General Skill Area above:	**Perform computer system analysis and programming**
Knowledge you should have to perform this skill:	• Interpret system flowcharts • Create batch routines
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about interpreting flowcharts and creating batch routines

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General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Verify/validate access to data/information**
Knowledge you should have to perform this skill:	• Validate customer authorization to access files • Verify message recipient's identification and security clearance • Safeguard AIS classified material
References you should study to gain the knowledge you need to perform this skill:	• Department of the Navy Information Systems Security (INFOSEC) Program (SECNAVINST 5239.3) • Department of the Navy Information Security Program Regulation (SECNAVINST 5510.36)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about AIS security, to include access, authorization, handling, and verification of classified material

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General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Administer AIS security program**
Knowledge you should have to perform this skill:	• Report and log AIS security violations • Change safe and cipher combinations • Destroy classified material (Secret and below) • Sanitize site and equipment • Mark classified material • Conduct classified material inventories (Secret and below) • Perform AIS security inspections
References you should study to gain the knowledge you need to perform this skill:	• Department of the Navy Information Systems Security (INFOSEC) Program (SECNAVINST 5239.3) • Department of the Navy Information Security Program Regulation (SECNAVINST 5510.36)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on administering your command security program

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General IT *Skill Area*	**COMMUNICATIONS**
A *skill* you are expected to perform from the General Skill Area above:	**Transmit and receive messages via manual and automated systems**
Knowledge you should have to perform this skill:	• Establish data communication with remote user manual or automated • Transmit and receive emergency action messages • Troubleshoot communication line problem • Log incoming and outgoing messages • Determine distribution and routing of messages electronically • Process and verify outgoing messages • Process Top Secret (TS), Special Category (SPECAT), and CAVEAT messages • Reproduce and distribute messages • Prepare outgoing messages • Review messages for minimize considerations • Process and draft communications-related messages (COMMSPOT, Broadcast-screening request (BSR), Emergency actions message, etc.) • Authentication • Radio telephone procedures • Voice communications • Daily changing call signs • Call signs • Classification • Special Handling messages
References you should study to gain the knowledge you need to perform this skill:	• Communication Instructions - General (ACP 121 and ACP 121 US SUPP 1) • Communications Instructions - Teletypewriter (Teleprinter) Procedures

	(ACP 126) • Communications Instructions - Tape Relay Procedures (ACP 127 and ACP 127 SUPP 1) • Communications Instructions - Distress and Rescue Procedures (ACP 135) • Naval Telecommunications Procedures Navy Super High Frequency Satellite Communications (NTP 2, Section I, and NTP 2, Section II) • Naval Telecommunications Procedures - Telecommunications Users Manual (NTP 3 and NTP 3, SUPP 1) • Naval Telecommunications Procedures Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 06-01) • Naval Warfare Publications Operational Reports (NWP 1-03.1)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about validating systems for messages, the correct procedures for processing emergency action messages, logging procedures, determining the distribution and verifying incoming and outgoing messages. Questions will also be asked about processing special handling messages, to include TS, SPECAT CAVEAT messages; preparing and processing communications messages, to include COMMSPOT, BSRS, services, and tracer's message; what procedures are used when automated system are not available, monitoring message traffic flow and backlogs; processing back-routed outgoing messages; the procedures and time requirements for transmitting and receiving message traffic; and proper format lines of messages, as well as use of authentication system tactical call signs

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General IT *Skill Area*	**MESSAGE CENTER**
A *skill* you are expected to perform from the General Skill Area above:	**Maintain files and list. Perform message center operations**
Knowledge you should have to perform this skill:	• Prepare, verify and update command guard list • Update message pickup authorization list • Conduct communication publication inventories • Update Naval warfare publications • Maintain communications publications • General Messages file • CIBS • AIGS/CADS • Compile message total • Conduct traffic analysis • Acknowledge receipt of COMMSPOTS, OPTASK • Perform communications guard shifts • Distribution
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – General (ACP 121 and ACP 121 US SUPP 1) • Telecommunications Users Manual (NTP 3) • U.S. Navy Address Indication Group (AIG) and Collective Address Designator (CAD) Handbook (NTP 3 SUPP 1) • Fleet Communications (NTP 4) • The Naval Warfare Publication System (NWP 1-01) • Basic Operational Communications Doctrine (NWP 6-01) • IT Training Series Modules 4 and 5

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: command guard list, message pickup authorization list, communication publication inventories, updating Naval Warfare publications, maintaining communications publications, General Messages file, CIBS, AIGS/CADS, compiling the message total, traffic analysis, distribution, status boards, and publications content.

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General IT *Skill Area*	**FLEET COMMUNICATIONS**
A *skill* you are expected to perform from the General Skill Area above:	• **Conduct voice network communications and transmission authentication** • **Monitor communications circuit quality and system status** • **Activate or deactivate communications circuits** • **Perform primary power circuit and communications system restorations** • **Troubleshoot communications system malfunctions**
Knowledge you should have to perform this skill:	• Operations of voice circuits and the associated equipment • Daily changing call signs • Change equipment configuration • Perform primary and casualty power restoration on communications circuits • Set up and use multiplex equipment • Activate and deactivate communications circuits, including fast reaction and overload circuits • Plot positions for antenna assignment • Maintain communications using orderwire • Set EMCON and HERO conditions • Types of systems • Automatic systems ashore/afloat • Fleet broadcast • Guard requirements • Frequencies • Circuit configurations • Message format • Verify broadcast number continuity • Broadcast configurations and equipment • Distress communications

	• Ship to shore communications • Troubleshoot communications system malfunctions • Monitor distress and SAR frequencies • Obtain a time tick • Crypto equipment usage
References you should study to gain the knowledge you need to perform this skill:	• Allied Call Sign and Address Group System-Instructions and Assignments (ACP 100) • Communications Instructions – General (ACP 121 and ACP 121, US SUPP 1) • Communications Instructions-Operating Signals (ACP 131 and ACP 131, SUPP 1) • Communications Instructions- Distress and Rescue Procedures (ACP 135) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • The Naval Warfare Publication System (NWP 1-01) • Basic Operational Communications Doctrine (NWP 6-01) • Procedures Manual for Over-the-Air Transfer (OTAT) and Over-the-Air Rekey (OTAR) (NAG 16) • Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem (NAVSHIPS E2081-BC-OMI-020) • Navy Satellite Communications Overview: Naval SHF SATCOM (NTP 2 SEC 1) • IT Training Series, Modules 4 and 5
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: communications equipment; system; authentication, broadcast, call signs, distress communications, teleprinters, setup and use of multiplex equipment; activation and deactivation of communications circuits, including fast reaction and overload circuits; plotting positions for antenna assignment; communications using orderwire; EMCON and HERO conditions; different systems, such as ROMEO, ECHO, etc., automatic systems

	ashore/afloat, Fleet broadcast; guard requirements, frequency selection; circuit configurations, message formatting, verifying broadcast number continuity, broadcast system, ship to shore communications; troubleshooting communications system; Time Tick; and OTAT and OTAR procedures.

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General IT *Skill Area*	**COMMUNICATIONS MEDIA**
A *skill* you are expected to perform from the General Skill Area above:	**Perform setup and maintenance procedures for antennas, couplers, converters, keyers, multi-couplers, receivers, transmitters, and transceivers**
Knowledge you should have to perform this skill:	• Set up antenna couplers and multi-couplers • Set up converters and multiplexers • Test multiplexers • Set up keyers • Set up receivers • Set up transmitters and transceivers • Set up emergency distress communications equipment • Change equipment configuration • Perform primary and casualty power restoration • Maintenance and operation of equipment • Rotate and align antennas for optimum reception • Perform antenna assignment selections • Raise and lower antennas • Power calibration • BIT test equipment use • Video teleconferencing transmission equipment
References you should study to gain the knowledge you need to perform this skill:	• Shipboard Antenna Systems – Volume 4 (NAVSEA 0967-LP-177-3040) • Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem, (NAVSHIPS E2081-BC-OMI-020) • Introduction to Wave Propagation, Transmission Lines, and Antennas (NEETS Module 10)

	• Radio Frequency Communications Principles (NEETS Module 17) • Introduction to Fiber Optics (NEETS Module 24) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 6-01) • Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat (OPNAVINST 5100.19) • Ships' Maintenance and Material Management (3-M) Manual (OPNAVINST 4790.4) • IT Training Series, Modules 4 and 5
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: resistance and continuity checks; low and high impedance; going aloft; type of energy radiated by which antenna; terms associated with the different types of antennas; antenna operations and theory; modulations and keying; frequency shifts; phase shift keying; location of the couplers; stages of radio transmitters and receivers, antenna maintenance, and the purpose of and how to troubleshoot these communications equipments

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General IT *Skill Area*	**RADIO WAVE PROPAGATION**
A *skill* you are expected to perform from the General Skill Area above:	**Demonstrate knowledge of electromagnetic theory as it relates to communications equipment and operations.**
Knowledge you should have to perform this skill:	- Radio wave propagation - Frequencies shift - Frequency ranges - Equipment usage - Antenna theory - Reporting Meaconing, Intrusion, Jamming, and Interference of electromagnetic systems
References you should study to gain the knowledge you need to perform this skill:	- Basic Operational Communications Doctrine (NWP 6-01) - Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem, (NAVSHIPS E2081-BC-OMI-020) - Introduction to Wave Propagation, Transmission Lines, and Antennas (NEETS Module 10) - Radio Frequency Communications Principles (NEETS Module 17) - Introduction to Fiber Optics (NEETS Module 24) - Telecommunications Users Manual (NTP 3) - Fleet Communications (NTP 4) - Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat (OPNAVINST 5100.19) - Ships' Maintenance and Material Management (3-M) Manual (OPNAVINST 4790.4)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: selective frequencies; status boards; parts of the atmosphere; RF and AF components; frequency ranges; VLF, HF, UHF, SHF, EHF frequencies and what they are used for; types of antennas used with each frequency; and terminology.

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General IT *Skill Area*	**COMMUNICATIONS SECURITY MATERIAL SYSTEM (CMS)**
A *skill* you are expected to perform from the General Skill Area above:	**Perform security procedures in accordance with COMSEC policy**
Knowledge you should have to perform this skill:	• Set up COMSEC equipment and use OTAR and OTAT procedures • Transmit and receive cryptographic keying material via OTAT/OTAR • Set up, verify, and operate STU III terminals • Receipt, inventory, and destruction of COMSEC material and equipment • Two-person integrity • Usage of all crypto devices (equipment) and their associated devices • Destruction of cryptographic keying material (CKM) • Update communications security (COMSEC) keying material

References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – Security (ACP 122) • CMS Policies and Procedures for Navy Electronic Key Management Systems (CMS 21-A) • Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Secure Telephone Unit Third Generation (STU III) COMSEC Material Management Manual (CMS 6) • Cryptographic Operators Manual (NSGTP 683-07-44-92) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 6-01)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: setting up COMSEC equipment and the uses of OTAR and OTAT procedures; transmitting and receiving cryptographic keying material via OTAT/OTAR, setting up, verifying, and operating STU III terminals; receipt, inventory, and destruction of COMSEC material and equipment; two-person integrity; usage of all crypto devices (equipment) and their associated devices; administrative procedures, AL codes; forms; administration change of command; and emergency destruction procedures

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General IT *Skill Area*	**SATELLITE COMMUNICATIONS**
A *skill* you are expected to perform from the General Skill Area above:	**Perform satellite communications procedures and operate associated equipment**
Knowledge you should have to perform this skill:	- Shore and afloat equipment use with satellite communications - Circuits related to SATCOM (e.g., CUDIXS, TACINTEL, SSIXS, TADIXS, etc.) - UPLINK and DOWN LINK - Satellite communications terminals - Calculate azimuth and elevation of satellite equipment - Set up and use SATCOM equipment, to include: antennas, converters, modems, receivers, transmitters, and multiplexers, - Perform primary and casualty power restoration - Plot positions for antenna assignments - Maintain communications using orderwire circuits - Test equipment - Associated crypto equipment

References you should study to gain the knowledge you need to perform this skill:	• Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Cryptographic Operators Manual (NSGTP 683-07-44-92) • Navy Satellite Communications Overview: Naval SHF SATCOM (NTP 2 SEC I) • Navy Satellite Operations- Satellite Communications (UHF SATCOM) Standard Operating Procedures (NTP 2 SEC II) • Navy Ultra High Frequency SATCOM (NTP 2 SEC II, ANNEXES D & H) • EHF SATCOM (NTP 2 SEC III-1) • Shipboard Antenna Systems – Volume 4 (NAVSEA 0967-LP-177-3040) • Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem (NAVSHIPS E2081-BC-OMI-020) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: shore and afloat equipment use with satellite communications; circuits related to SATCOM (e.g., CUDIXS, TACINTEL, SSIXS, TADIXS, etc.); UPLINK and DOWN LINK; satellite communications terminal; calculating azimuth and elevation: usage of SATCOM equipment, to include antennas, converters, modems, receivers, transmitters, and multiplexers; primary and casualty power restoration; plotting positions for antenna assignments; communications using orderwire circuits; test equipment, and associated crypto equipment

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General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Control and verify access to restricted areas; handle classified material, including the destruction of classified material.**
Knowledge you should have to perform this skill:	• Validate customer authorization to access files • Verify message recipient's identification and security clearances. • Safeguard classified material • Tempest requirements • Control access to restricted areas • Change safe and cipher combinations • Destruction of material classified Top Secret and below • Sanitize site and equipment • Conduct classified material inventories • Set up communications security COMSEC equipment • Receive, inventory, and destroy classified material • Declassify classified hardware • Store communications security (COMSEC) keying material

References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions - Security (ACP 122) • CMS Policies and Procedures for Navy Elecronic Key Management Systems (CMS 21-A) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 6-01) • Department of Navy Personnel Security Program (SECNAVINST 5510.30A)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: validating customer authorization to access files; verifying message recipient's identification and security clearances; safeguarding classified material; access to restricted areas; changing safe and cipher combinations, destruction of classified material Top Secret and below; sanitizing site and equipment; conducting classified material inventories; setting up communications security (COMSEC) equipment; receiving, inventorying, and destroying classified material; and emergency destruction

Part 2

Advancement Handbook for IT2

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Manage a Media Library**
Knowledge you should have to perform this skill:	• Update media library procedures • Establish media library history files • Audit media library listings • Prepare procedures and parameters for initialization of storage media
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about updating media library procedures, establishing history files, auditing listings, and preparing procedures and parameters for initialization of storage media

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General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform network administration procedures**
Knowledge you should have to perform this skill:	• Install and test network software • Change network system software configurations • Correct program errors • Configure network components • Perform network administrator functions
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Configuration Management," and "Software Installation, Setup, and Configuration"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on changing software configuration and setting up parameters

Advancement Handbook forIT2

General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Troubleshoot remote communications**
Knowledge you should have to perform this skill:	• Test modems • Determine communications protocols
References you should study to gain the knowledge you need to perform this skill:	• Upgrading and Repairing PC's, areas covering "Communications," "Protocols," "Troubleshooting," and "Modems and Diagnostics"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on testing and troubleshooting modems, to include determining protocols for modem communications

Advancement Handbook for IT2

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform network operations**
Knowledge you should have to perform this skill:	• Troubleshoot network malfunctions • Perform network system restorations
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Troubleshooting and backups and restorations" • Upgrading and Repairing PC's, area covering "Data Backup"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on how to troubleshoot network malfunctions and procedures for backing up and restoring the network

Advancement Handbook for IT2

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Perform system console operations**
Knowledge you should have to perform this skill:	• Prepare run schedules • Resolve problems in run schedules • Input and manipulate computer system data
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on preparing run schedules and resolving problems with schedules

Advancement Handbook for IT2

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Troubleshoot hardware malfunctions**
Knowledge you should have to perform this skill:	• Perform low level format on hard drives
References you should study to gain the knowledge you need to perform this skill:	• Upgrading and Repairing PC's, areas covering "Formatting" and "Hard Drives"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on formatting hard drives

Advancement Handbook for IT2

General IT *Skill Area*	**TECHNICAL ADMINISTRATION**
A *skill* you are expected to perform from the General Skill Area above:	**Perform technical administration**
Knowledge you should have to perform this skill:	• Design networks • Review trouble reports
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, area covering "Network Planning" • IT Training Series, Module 3
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on designing networks and reviewing trouble reports

Advancement Handbook for IT2

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Provide and control access to classified material**
Knowledge you should have to perform this skill:	• Issue and update on-line user and identification and passwords • Clear media and hardware • Declassify and/or destroy classified hardware • Complete and verify destruction records (Secret and below) • Receive, inspect, and handle material classified SPECAT or Top Secret and above
References you should study to gain the knowledge you need to perform this skill:	• SECNAVINST 5239.3 • SECNAVINST 5510.36 • DOD Password Management Guidelines, Green (CSC-STD-002-85)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions concerning password management, declassification and destruction of hardware, and handling of classified material

Advancement Handbook for IT2

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Administer AIS program**
Knowledge you should have to perform this skill:	• Update AIS equipment inventory
References you should study to gain the knowledge you need to perform this skill:	• SECNAVINST 5239.3 • SECNAVINST 5510.36
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on how to conduct, document, and update AIS equipment inventories

Advancement Handbook for IT2

General IT *Skill Area*	**COMMUNICATION**
A *skill* you are expected to perform from the General Skill Area above:	**Perform administrative duties**
Knowledge you should have to perform this skill:	• Maintain NWPLS • Verify Commands Guard List • Track SITREPS, MOVEREPS, and identify communications requirements • Draft and verify all messages, e.g., service messages, tracers, etc. • Types of logs, files and directives • General Messages and their usage • Minimize • Communications Shifts • Annexes of the OPORDERS • Proper use of operating signals and prowords • Communications organization • Publications and their contents • Prepare communications plan • 3M
References you should study to gain the knowledge you need to perform this skill:	• Allied Call Sign and Address Group System (ACP 100) • Communications Instructions - General (ACP 121 and ACP 121 US SUPP-1) • Communication Instructions - Operating Signals (ACP 131 and ACP 131 SUPP-1) • Automatic Digital Network (AUTODIN) Operating Procedures (JANAP 128) • The Naval Warfare Publication System (NWP 1-01) • Basic Operation Communications Doctrine (NWP 6-01)

	- Operational Reports (NWP 1-03.1) - Battle Group Communications (NWP 6-01.1) - Ships Maintenance and Material Management (3-M) Manual (OPNAVINST 4790.4) - IT Training Series Modules 4 and 5
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: publications corrections and maintaining an NWPL library; verifying command's Guard List; SITREPS, MOVEREPS, OPORDERS, tracers, service messages, and termination requests; proper message format for preformatted messages; retaining messages in proper file; directives that govern communications; and types of general messages. Questions will also be asked about DEFCON conditions; portions of an OPORDER; types of messages that use OPSIG and PROWORDS; subsystems in the Defense Communications system; flag being embarked on ships; functional components; content of publications; quality control maintenance; message processing; and harmful interference messages

Advancement Handbook for IT2

General IT *Skill Area*	**FLEET COMMUNICTIONS**
A *skill* you are expected to perform from the General Skill Area above:	**Operate SATCOM, Broadcast and test equipment, antenna system, crypto equipment and equipment associated with the different subsystems and automatic systems**
Knowledge you should have to perform this skill:	• Supervise and instruct use of all communications equipment, e.g., modems, receivers, transceivers, transmitters • Ship to shore communications • OTAR/OTAT procedures • Fleet Communications Check Off List • Call signs • Equipment used for full period terminations • SATCOM communications equipment and antennas • Acronyms and terminology • Watchbill • Battle Group communications
References you should study to gain the knowledge you need to perform this skill:	• Telecommunications: Glossary of Telecommunications Terms (FEDSTD 1037) • Strike Warfare (STW), Autisurface Ship Warfare (ASU), Intelligence (INT), Electronic Warfare (EW), and Command, Control (FXP 3) • Communications Security Material Systems (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Planned Maintenance System Communications System Test Guide (NAVELEX 0967-LP-642-6010) • Shipboard Antenna Systems - Volume 4 (NAVSEA 0967-LP-177-3040) • Technical Manual for Fleet Multichannel

	Broadcast System Receive Subsystem (NAVSHIPS E2081-BC-OMI-020) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • The Naval Warfare Publication System (NWP 1-01) • Basic Operational Communications Doctrine (NWP 6-01) • Procedures Manual for Over-the-Air Transfer (OTAT) and Over-the-Air Rekey (OTAR) (NAG 16) • Navy Satellite Communications Overview: Naval SHF SATCOM (NTP 2 SEC I) • Navy Satellite Operations – Satellite Communications (UHF SATCOM) (NTP 2 SEC II) • EHF SATCOM (NTP 2 SEC III-1 EHFSAT) • IT Training Series, Modules 4 and 5
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the following areas: international frequencies for distress communications; publications required for proper operation of a termination; frequency range; Autodin systems; crypto equipment and its usage; and proper use of VLF/UHF/SHF/HF/EHF

Advancement Handbook for IT2

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Practice security procedures regarding: CMS, access to classified spaces, classifications, emergency destruction, physical security, compromises, and secure communications.**
Knowledge you should have to perform this skill:	• Conduct destruction • Inventory classified material; and destroy classified material • Verify destruction records, complete destruction reports and submit required report to CMS custodian • Receive, inspect, and handle SPECAT or Top Secret and above • Crypto, emission, physical, and transmission security • Categories of incidents: cryptographic, personnel, and physical • Responsibility of a Local Holder • Accountability legend codes • Reports and documentation
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – Security (ACP 122) • CMS Policies and Procedures for Navy Electronic Key Management Systems (CMS 21-A) • Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Secure Telephone Unit Third Generation (STU III) COMSEC Material Management Manual (CMS 6) • Cryptographic Operators Manual (NSGTP 683-07-44-92) • Telecommunications Users Manual (NTP 3)

	• Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 6-01) • Department of the Navy Personnel Security Program Regulation (SECNAVINST 5510.30A) • Department of the Navy Information Security Program Regulation (SECNAVINST 5510.36)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the following areas: emergency destruction; operational responsibilities; administration of the CMS program; accountability legend codes; destruction; inventory; transmission; physical, crypto, and emission security; security classifications; loss of security; and security areas

Part 3

Advancement Handbook for IT1

Advancement Handbook for IT1

General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Install Networking hardware**
Knowledge you should have to perform this skill:	• Install routers • Install bridges • Install hubs • Install repeaters • Install gateways • Install cables and connections
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Network Tools," "Hubs," "Gateways," "Repeaters," "Routers," and "Bridges"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on installing, configuring, and testing network hardware

Advancement Handbook for IT1

General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Determine system requirements**
Knowledge you should have to perform this skill:	• Determine I/O requirements • Determine memory requirements • Determine storage requirements • Determine communications requirements
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering system requirements
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on determining memory, storage, and I/O and communications requirements for system setups

Advancement Handbook for IT1

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Coordinate system availability**
Knowledge you should have to perform this skill:	• Coordinate computer downtime with users • Coordinate computer maintenance time with technicians and users • Coordinate computer backups with users • Coordinate trouble calls with users
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on coordinating computer maintenance, downtime, backups, and restores

Advancement Handbook for IT1

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Enhance network performance**
Knowledge you should have to perform this skill:	• Modify network parameters for increased network performance • Analyze system performance reports • Implement and monitor changes derived from system performance analysis reports • Set network software parameters
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Performance Management"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on modifying parameters for increasing network performance and how to analyze reports so that you can enhance system performance

Advancement Handbook for IT1

General IT *Skill Area*	**TECHNICAL ADMINISTRATION**
A *skill* you are expected to perform from the General Skill Area above:	**Perform network configuration changes**
Knowledge you should have to perform this skill:	• Analyze display of existing network port configuration • Analyze configuration of a network
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Configurations"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on analyzing network configurations

Advancement Handbook for IT1

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Administer AIS security program**
Knowledge you should have to perform this skill:	• Implement AIS security countermeasures and contingency plans • Update AIS security plans
References you should study to gain the knowledge you need to perform this skill:	• SECNAVINST 5239.3 • SECNAVINST 5510.36
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on implementing and updating the AIS security plans

Advancement Handbook for IT1

General IT *Skill Area*	**ANALYSIS**
A *skill* you are expected to perform from the General Skill Area above:	**Determine database requirements**
Knowledge you should have to perform this skill:	• Analyze database requirements • Review database structures • Identify database problems • Change database structures
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on how to determine database requirements

Advancement Handbook for IT1

General IT *Skill Area*	**ANALYSIS**
A *skill* you are expected to perform from the General Skill Area above:	**Determine computer program requirements**
Knowledge you should have to perform this skill:	• Analyze existing computer program resources • Analyze and update computer program requirements
References you should study to gain the knowledge you need to perform this skill:	• IT Training Series, Module 2
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on determining computer program requirements

Advancement Handbook for IT1

General IT S*kill Area*	**COMMUNICATIONS**
A *skill* you are expected to perform from the General Skill Area above:	**Direct and supervise communications in accordance with the communications plan**
Knowledge you should have to perform this skill:	• Direct and use communications assets • Prepare message center access list • Review and direct updating of message center data bases • Coordinate restoration of communication systems • Antenna theory and types • Automatic systems • Communications concepts • Frequency management • Test equipment
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – General (ACP 121 and ACP 121 US SUPP 1) • Telecommunications Users Manual (NTP 3) • Planned Maintenance System Communications System Test Guide (NAVELEX 0967-LP-642-6010) • The Naval Warfare Publication System (NWP 1-01) • Basic Operational Communications Doctrine (NWP 6-01) • IT Training Series, Modules 4 and 5 • Shipboard Antenna Systems – Volume 4 (NAVSEA 0967-LP-177-3040) • Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem (NAVSHIPS E2081-BC-OMI-020) • Introduction to Wave Propagation, Transmission Lines, and Antennas (NEETS Module 10)

	• Radio Frequency Communications Principles (NEETS Module 17) • Introduction to Fiber Optics (NEETS Module 24) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly	You can expect questions on the following areas: earth reflection; lengths of antennas; antenna operations; Autodin, CUDIXS, DDN, MARCEMP, NOW, NST and SSIXS; communications interfaces; and test equipment

Advancement Handbook for IT1

General IT *Skill Area*	**SECURITY, CMS**
A *skill* you are expected to perform from the General Skill Area above:	**Supervise communications security and CMS programs**
Knowledge you should have to perform this skill:	• Receive, issue, handle, inventory, and destroy COMSEC material • Administrative responsibility of the CMS custodian • Destroy material classified SPECAT or Top Secret and above • Verify destruction of material classified SPECAT or Top Secret and above • Submit required communications security material system (CMS) reports • Implement security countermeasures and contingency plans • Prepare security procedures checklists • Prepare and update applicable portions of emergency action plans (EAPs)
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – Security (ACP 122) • CMS Policies and Procedures for Navy Electronics Key Management Systems (CMS 21-A) • Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Secure Telephone Unit Third Generation (STU III) COMSEC Material Management Manual (CMS 6) • Cryptographic Operators Manual (NSGTP 683-07-44-92) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4)

	• Basic Operational Communications Doctrine (NWP 6-01)
	• Department of the Navy Personnel Security Program (SECNAVINST 5510.30A)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: CMS administration, CMS destruction, CMS security, Local Holder, CMS material, CMS reports, security management, emergency destruction, and physical security

Advancement Handbook for IT1

General IT *Skill Area*	**ADMINISTRATIVE**
A *skill* you are expected to perform from the General Skill Area above:	**Use publications, maintain files and directives, and prepare reports, TSO and TSR**
Knowledge you should have to perform this skill:	• Use of commercial traffic • Communication plans and documents • Communication shifts • Required files and directives • Minimize • Administrative organizations • Message Processing • Publications content • Required reports
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions - General (ACP 121 and ACP 121 US SUPP-1 • Communications Instructions - Operating Signals (ACP 131 and ACP 131 SUPP-1) • Automatic Digital Network (AUTODIN) Operating Procedures (JANAP 128) • The Naval Warfare Publications System (NWP 1-01) • Basic Operational Communications Doctrine (NWP 6-01) • Operational Reports (NWP 1-03.1) • Battle Group Communications (NWP 6-01.1) • Ships Maintenance and Material Management (3-M) Manual (OPNAVINST 4790.4) • Standard Organization and Regulations of the U.S. Navy (OPNAVINST 3120.32) • IT Training Series, Modules 4 and 5

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: commercial traffic; communication plans and documents; communication shifts; required files and directives; Minimize; administrative organizations; message processing; publications content; and required reports

Part 4

Advancement Handbook for ITC

Advancement Handbook for ITC

General IT *Skill Area*	**SYSTEMS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Monitor network efficiency**
Knowledge you should have to perform this skill:	• Analyze network capacity and reliability • Test network software • Test and evaluate network connections
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Local Area Networks," "Networks," and "Network Tools"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on testing network software and connections, to include installing, removing, upgrading and diagnostics; evaluating, upgrading; and implementing changes to resource capacity; and reliability of network capabilities

Advancement Handbook for ITC

General IT *Skill Area*	**APPLICATIONS MANAGEMENT**
A *skill* you are expected to perform from the General Skill Area above:	**Monitor system resources**
Knowledge you should have to perform this skill:	• Establish and maintain system resource limits
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Network Resources"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on managing resources, such as networking hardware, devices, networking software, auxiliary software; and other miscellaneous areas, such as processes, security, data structures, users, and volumes

Advancement Handbook for ITC

General IT *Skill Area*	**TECHNICAL ADMINISTRATION**
A *skill* you are expected to perform from the General Skill Area above:	**Determine system growth requirements**
Knowledge you should have to perform this skill:	• Project future application growth capabilities • Prepare and implement application and system program changes
References you should study to gain the knowledge you need to perform this skill:	• SECNAVINST 5000.2B, IT Acquisition Programs
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions relating to the acquisition, development, and operation of information resources

Advancement Handbook for ITC

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Monitor network audit logs**
Knowledge you should have to perform this skill:	• Control access to certain files and directories • Control upload privileges • Monitor use of passwords and user ID's • Allow privileges based on status and need • Use of various verification utilities • Report and record efforts to access system by unauthorized users
References you should study to gain the knowledge you need to perform this skill:	• Novell's Complete Encyclopedia of Networking, areas covering "Security"
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions regarding system access, user authorization and validation, passwords, and recording and reporting procedures for violations

Advancement Handbook for ITC

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Handling AIS computer security incidents and violations**
Knowledge you should have to perform this skill:	• Investigate, document and report AIS computer security incidents and violations
References you should study to gain the knowledge you need to perform this skill:	• Navy Information Assurance (IA) Program (OPNAVINST 5239.1B)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on investigating, documenting, and reporting AIS computer security incidents and violations

Advancement Handbook for ITC

General IT *Skill Area*	**SECURITY**
A *skill* you are expected to perform from the General Skill Area above:	**Develop, conduct, and evaluate an Activity ADP Security Plan (AADPSP)**
Knowledge you should have to perform this skill:	• Develop Activity AIS Security Plan • Develop risk analysis • Develop contingency plans • Develop Security Test and Evaluation (ST&E) • Conduct AIS security training
References you should study to gain the knowledge you need to perform this skill:	• Navy Information Assurance (IA) Program (OPNAVINST 5239.1B)
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on developing, implementing, and testing all phases of the Activity ADP Security Plan (AADPSP), to include training

Advancement Handbook for ITC

General IT *Skill Area*	**SECURITY, CMS**
A *skill* you are expected to perform from the General Skill Area above:	**Manage security, CMS, and STU III programs**
Knowledge you should have to perform this skill:	• Manage communications assets • Conduct CMS inspections • Develop EAP program • Investigate and document security and CMS violations
References you should study to gain the knowledge you need to perform this skill:	• Communications Instructions – Security (ACP 122) • CMS Policies and Procedures for Navy Electronic Key Management Systems (CMS 21-A) • Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual (CMS 5) • Secure Telephone Unit Third Generation (STU III) COMSEC Material Management Manual (CMS 6) • Cryptographic Operators Manual (NSGTP 683-07-44-92) • Telecommunications Users Manual (NTP 3) • Fleet Communications (NTP 4) • Basic Operational Communications Doctrine (NWP 6-01) • Department of the Navy Personnel Security Program Regulation (SECNAVINST 5510.30A)

Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions on the following areas: CMS admin organization; publication contents, management of CMS account, CMS access, duties and of the CMS custodian, CMS crypto equipment, CMS material, storage requirements, emergency destruction, physical security; admin logs, and STU III information

Advancement Handbook for ITC

General IT S*kill Area*	**TECHNICAL ADMINISTRATION**
A *skill* you are expected to perform from the General Skill Area above:	**Manage and determine telecommunications protocol as required; test and evaluate equipment, and determine crypto and installation requirements**
Knowledge you should have to perform this skill:	• SHF communications and associated equipment • EHF communications and associated equipment SATCOM communication and associated equipment • Orbits • Frequency management • Fleet communications • Communications equipment • Equipment operations • Telecommunications Service Requests • Telecommunications Service Orders
References you should study to gain the knowledge you need to perform this skill:	• Submission of Telecommunications Service Requests (DISA 310-130-1) • Spectrum Management Manual (NTP 6) • Jane's Military Communications
Exam Expectations. These are subject areas you should know to help you answer exam questions correctly:	You can expect questions about the following areas: SHF, EHF, and SATCOM communication and associated equipment; type of orbits; frequency management; Fleet communications; communications equipment and operations; and TSO and TSR preparation

Appendix 1

References Used in This Advancement Handbook

Short Title	Long Title	Stocking Point
	PC' s For Dummies	NOTE 7
	Upgrading and Repairing PC's	NOTE 7
	Novell's Complete Encyclopedia of Networking	NOTE 7
	Inside UNIX	NOTE 7
	Jane's Military Communications	NOTE 14
ACP 100	Allied Call Sign and Address Group System – Instructions and Assignments	NOTES 4 & 10
ACP 121 / US SUPP-1	Communications Instructions – General	NOTES 4 & 10
ACP 122	Communications Instructions – Security	NOTES 4 & 10
ACP 125	Communications Instructions – Radiotelephone Procedures	NOTES 4 & 10
ACP 126	Communications Instructions – Teletypewriter (Teleprinter) Procedures	NOTES 4 & 10
ACP 127 / ACP 127 SUPP-1	Communications Instructions – Tape Relay Procedures	NOTES 4 & 10
ACP 131 / ACP 131 SUPP-1	Communications Instructions – Operating Signals	NOTES 4 & 10
ACP 135	Communications Instructions – Distress and Rescue Procedures	NOTES 4 & 10
CMS 21-A	CMS Policies and Procedures for Navy Electronic Key Management Systems	NOTE 12
CMS 5	Communications Security Material System (CMS) Cryptographic Equipment Information/Guidance Manual	NOTE 12
CMS 6	Secure Telephone Unit Third Generation (STU-III) COMSEC Material Management Manual	NOTE 12
CSC-STD-002-85	Department of Defense Password Management Guidelines, Green	NOTE 9
DISA 310-130-1	Submission of Telecommunications Service Requests	NOTE 11
FED STD 1037	Telecommunications: Glossary of Telecommunications Terms	NOTE 2

FXP 3	Strike Warfare (STW), Antisurface Ship Warfare (ASU), Intelligence (INT), Electronic Warfare (EW) and Command, Control	NOTE 8
NAVEDTRA 14222	IT Training Series, Module 1 - Administration and Security:	NOTE 15
NAVEDTRA 14223	IT Training Series, Module 2 - Computer Systems	NOTE 15
NAVEDTRA 14224	IT Training Series, Module 3 - Network Communications	NOTE 15
NAVEDTRA 14225	IT Training Series, Module 4 - Communications Hardware	NOTE 15
NAVEDTRA 14226	IT Training Series, Module 5 - Communications Center Operations	NOTE 15
NAVEDTRA 14182	NEETS Module 10 - Introduction to Wave Propagation, Transmission Lines, and Antennas	NOTE 1
NAVEDTRA 14188	NEETS Module 16 - Introduction to Test Equipment	NOTE 15
NAVEDTRA 14189	NEETS Module 17 - Radio Frequency Communications Principles	NOTE 15
NAVEDTRA 14194	NEETS Module 22 - Introduction to Digital Computers	NOTE 15
NAVEDTRA 14196	NEETS Module 24 - Introduction to Fiber Optics	NOTE 15
NAVSHIPS E2081-BC-OMI-020	Technical Manual for Fleet Multichannel Broadcast System Receive Subsystem	NOTE 1
NSGTP 683-07-44-92	Cryptographic Operators Manual	NOTE 5
NTP 2 SEC I	Navy Satellite Communications Overview: Naval SHF SATCOM	NOTE 6
NTP 2 SEC II	Navy Satellite Operations – Satellite Communications (UHF SATCOM) (Standard Operating Procedures)	NOTE 6
NTP 2 SEC II ANNEXS D & H	Navy Ultra High Frequency SATCOM	NOTE 6
NTP 2 SEC III-1 EHFSAT	EHF SATCOMM	NOTE 6
NTP 3	Telecommunications Users Manual	NOTE 6
NTP 3 SUPP-1	U.S. Navy Address Indicating Group (AIG) and Collective Address	NOTE 6

	Designator (CAD) Handbook	
NTP 4	Fleet Communications	NOTE 6
NTP 6	Spectrum Management Manual	NOTE 6
NWP 1-01	The Naval Warfare Publications System	NOTES 4 & 8
NWP 1-03.1	Operational Reports	NOTES 4 & 8
NWP 5-01	Naval Operational Planning	NOTES 4 & 8
NWP 6-01	Basic Operational Communications Doctrine	NOTES 4 & 8
NWP 6-01-1	Battle Group Communications	NOTES 4 & 8
OPNAVINST 3120.32	Standard Organization and Regulations of the U.S. Navy	NOTE 3
OPNAVINST 4790.4	Ships' Maintenance and Material Management (3-M) Manual	NOTE 3
OPNAVINST 5100.19	Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat	NOTE 3
OPNAVINST 5239.1B	Navy Information Assurance (IA) Program	NOTE 3
SECNAVINST 5000.2B	Implementation of Mandatory procedures for Major and Non-Major Defense Acquisition Programs and Major and Non-Major Information Technology Acquisition Programs	NOTE 3
SECNAVINST 5239.3	Department of the Navy Information Systems Security (INFOSEC) Program	NOTE 3
SECNAVINST 5510.30A	Department of the Navy Personnel Security Program Regulation	NOTE 3
SECNAVINST 5510.36	Department of the Navy Information Security Program Regulation	NOTE 3

LEGEND:

Note 1 — To Order, MILSTRIP to NAVICP PHILA (Stock Number from NAVSUP P2002) or via INTERNET http://www.nll.navsup.navy.mil

Note 2 — DOD Index of Specifications and Standards Part II (Use DD Form 1425) or via INTERNET http://dadssp.daps.mil

Note 3 — Via INTERNET http://neds.nebt.daps.mil

Note 4 — To order obtain Stk. No. from NAVSUP P2002, then MILSTRIP to NAVICP PHILA or (if unclass) via INTERNET http://www.nll.navsup.navy.mil or see your command NWP Custodian

Note 5 — Order by e-mail or written request: e-mail address—
cryptologic.products@cnet.navy.mil or send written request to:
Commanding Officer
NETPDTC N316
6490 Saufley Field Road
Pensacola, FL 32509-5238

Note 6 – Download from COMNAVCOMTELCOM's Bulletin Board Service (BBS); ALCOM 010/96 refers. If document is classified, MILSTRIP to NAVICP PHILA (Stock Number from NAVSUP P2002)

Note 7 – Commercial Purchase

Note 8 – NTIC Series B1 CD-ROM's (See your command NWP Custodian)

Note 9 – INTERNET http://infosec.nosc.mil/TEXT/DOCUMENTS/other-doc.html#ncsc

Note 10 – See your command NWP Custodian.

Note 11 – INTERNET http://www.disa.mil/

Note 12 – Director
COMSEC Material System
3801 Nebraska Ave NW
Washington, DC 20393-5453

Note 13 – Department of the Navy
Space and Naval Warfare Systems Command
Washington, DC 20363-5111

Note 14 – See your command library

Note 15 – INTERNET http://www.advancement cnet.navy.mil/ or toll-free phone 1-877 264-8583. You will receive a printed copy only if you enroll in the course. See the website for NETPDTC central enrollment procedures. If you do not want to enroll in the course, you may download it in portable document file (PDF) format from the website.